

## CLAIMS

### What is claimed is:

1. A vessel harvesting device comprising a stenting catheter, a sheath catheter with proximal and distal ends, and a cutting tube that is connectable to the distal end of the sheath catheter.

2. The vessel harvesting device of Claim 1, wherein the sheath catheter further comprises a peel-away catheter.

3. The vessel harvesting device of Claim 2, wherein the peel-away catheter is longitudinally scored.

4. The vessel harvesting device of Claim 2, wherein the peel-away catheter is spirally scored.

5. The vessel harvesting device of Claim 1, wherein the cutting tube has a beveled cutting edge.

6. The vessel harvesting device of Claim 6, wherein the bevel is bevelled radially outward.

7. The vessel harvesting device of Claim 1, wherein the cutting tube further comprises an inner collecting lumen.

8. The vessel harvesting device of Claim 7, wherein the cutting tube is about 5 to about 20 cm long, about 3 to about 15 mm in diameter, and the collecting lumen is about 3 to about 15 cm long.

9. The vessel harvesting device of Claim 1, wherein the sheath catheter has connecting prongs at its distal end and the cutting tube has corresponding connecting ports at its distal end for connecting the cutting tube to the sheath catheter.

10. The vessel harvesting device of Claim 9, wherein the cutting tube further comprises a channel for inserting the sheath catheter's connecting prongs through the lumen of the cutting tube.

5

11. The vessel harvesting device of Claim 10, wherein the channel is located 90 degrees from the connecting ports.

12. The vessel harvesting device of Claim 1, further comprising a plurality of  
10 guide wires for guiding the cutting tube during vessel harvesting.

13. A method of harvesting a vessel of a patient comprising the steps of:  
making a first skin incision at a first point over the vessel to be harvested;  
making a second skin incision at a second point over the vessel to be  
15 harvested;  
isolating the vessel to be harvested at the first and second incisions;  
ligating the vessel to be isolated at the first and second incisions;  
inserting a stenting catheter and a sheath catheter into the vessel to be  
harvested through the first skin incision and out through the second skin incision;  
20 connecting a cutting tube to the sheath catheter;  
pulling the stenting tube taught;  
inserting the cutting tube through the second skin incision;  
pulling the cutting tube under the skin of the patient and collecting the  
vessel within the cutting tube;  
25 removing the cutting tube with vessel inside from the patient; and  
removing the vessel from the cutting tube.

14. The method of harvesting a vessel of Claim 13, wherein the sheath catheter is a peel-away catheter.

30

15. The method of harvesting a vessel of Claim 14, wherein the step of pulling the cutting tube further comprises peeling apart the peel-away catheter.

16. The method of harvesting a vessel of Claim 15, wherein the peel-away catheter is longitudinally scored.

17. The method of harvesting a vessel of Claim 15, wherein the peel-away catheter is spirally scored.

18. The method of harvesting a vessel of Claim 13, wherein the vessel further comprises the greater saphenous vein.

19. The method of harvesting a vessel of Claim 13, wherein the vessel further comprises the lesser saphenous vein.

20. The method of harvesting a vessel of Claim 13, wherein the vessel is the basilic vein.

21. The method of harvesting a vessel of claim 13, wherein the vessel further comprises the cephalic vein.

22. The method of harvesting a vessel of Claim 13, wherein the vessel further comprises the radial artery.